

ENHANCED MANAGEMENT

Managing the environment to maximize cow comfort

Cow comfort is critical to dairying successfully as it impacts a cow's overall wellbeing, health, and productivity. It is often thought of as a function of the cow's management environment, which considers both the physical (e.g. housing) and social (e.g. interactions with cows and people) aspects of the environment. Essentially, cow comfort or environmental enrichment, as zoos refer to it, aims to provide a physically and mentally enriching environment.

When done properly, environmental enrichment on-farm or at the zoo can improve biological functioning, such as productivity, health, and reproductive success. It can also allow animals to cope with stress and frustration associated with housing and management practices, increase natural behaviors, and promote a positive affective state.

A cow needs time to be a cow and practice natural behaviors that support her physiological and psychological needs. In a 24-hour period, a cow spends about half of the time resting, a third of the time ruminating, and a sixth of the time feeding and drinking. That only leaves a couple of hours to milk the cow and do any other management tasks, like health or reproductive checks. Interestingly, resting is the cow's most valued behavior as it takes precedence over eating and social behaviors when opportunities to perform those behaviors are restricted. Resting has many benefits for the cow through physiological effects that decrease stress and lameness, increase milk production, and ultimately increase the length of time a cow remains in the herd. Resting, measured by lying time, is an opportunity for most farms as many farms fail to have their cows achieve 12 hours of rest per day.

There are a number of ways that we can disturb the time budget of our lactating cows. They include: excessive time outside the pen primarily due to milking, uncomfortable stalls, overcrowding and excessive competition for valued resources, inadequate feed availability, comingling first lactation cows with older cows, and poor heat stress abatement. We can support the time budget (i.e. natural behaviors) of cows by focusing on the five categories

Environmental enrichment...

Not just for zoos.

of environmental enrichment used by many zoos: social, physical, nutritional, occupational, and sensory.

Currently, cow comfort focuses primarily on the social and physical categories. Future improvements in cow comfort are likely to include aspect of occupational and sensory enrichment.

Social – Provide access to other cows and humans. Keep cows in stable groups to meet their social needs. Regroup cows as pairs or groups later in the day or evening to minimize fighting. House first lactation cows separately from mature cows. Optimize the stocking density to minimize negative cow to cow interactions. Treat cows kindly.

Physical – Provide clean, comfortable housing. Use heat abatement strategies. Avoid overcrowding that limits access to resting and feeding areas. Provide access to secluded areas for sick and calving cows.

Nutritional – Provide quality feed that is consistently available. Achieve this by delivering feed more than once daily, pushing up feed throughout the day, especially in the first two hours after feed delivery, and avoiding overcrowding.

Occupational – Provide cows with the ability to exercise. In

zoos, cognitive enrichment, or task solving is encouraged. Currently, this aspect of environmental enrichment is not implemented purposely on dairies. However, many of us have experienced the smart cow that opens a gate or unlocks headlocks.

Sensory – Provide stimulus to trigger one or more of the senses (e.g. auditory, visual, olfactory, and tactile). Provide a grooming brush. Minimize high-pitch sounds. Play music while milking to calm workers and cows.

With continued volatility in feed and milk prices, we need to sharpen our focus on the consistent cow and economic benefits of improved cow comfort. Modest investments in housing or changes in cow management routines can pay large dividends in greater cow health and performance. □

Heather Dann, PhD, (dann@whminer.com or 518-846-7121 ext. 119) is a Research Scientist at Miner Institute.

Typical time budget of cows in confinement housing (R. Grant, Miner Institute)

Activity	Hours per Day
Resting (lying)	10 to 14
Eating	3 to 5
Drinking	0.5
Ruminating (standing or lying)	7 to 10
Interactions, grooming, standing	2 to 3
Milking (outside of pen)	2.5 to 3.5

Cow comfort is a function of the cow's management environment.

